VI. DESCRIPTION OF A NEW GENUS AND SPECIES OF TORTOISE FROM THE JURASSIC OF COLORADO.

By O. P. HAY.

PROBAENA gen. nov.

This genus and species is based on a single specimen, which was collected in Jurassic deposits, more specifically, in the lower portion of the Morrison, or Atlantosaurus, beds, in the "Marsh Quarry," on the Felch ranch, eight miles north of Canyon City, Colorado. The specimen has been kindly put into my hands by Prof. J. B. Hatcher, Curator of the Department of Vertebrate Palæontology of Carnegie Museum, Pittsburgh, Pa., to which institution it belongs, and by whose collector it was secured in 1901. Its museum number is 917.

A genus closely related to *Baëna*, but with a more depressed carapace, the hinder border of which is little or not at all notched. Vertebral scutes broader than the costal scutes. Plastron with its hinder lobe rounded. A fontanelle (permanent?) between the inner ends of the mesoplastra.

PROBAÉNA SCULPTA Sp. nov.

Pl. III, Figs. 1 and 2.

The specimen is a small and somewhat imperfect turtle, being represented by about three-fourths of the carapace and the greater portion of the plastron. The length of the carapace is, at present, 105 mm., and this is very near the original length. The width is 70 mm. The shell has apparently been rather flat, but it was doubtless somewhat less so in life than at present. The greatest distance between the upper and the lower surfaces is now 27 mm. The borders of the carapace behind the inguinal notches are considerably flared upward, but this may be due somewhat to post-mortem distortion. This border appears to have been little or not at all notched, except in the midline behind, where there is a slight excavation. In the nearly smooth hinder border this genus differs from the species of *Bačna*.

Most of the sutures and of the epidermal sulci are obscure; and in most parts of the carapace the sutures are incapable of determination. The sulci bounding the second, third, and fourth vertebral scutes are satisfactorily seen. These scutes have been very broad, each about 34 mm.; while the costal scutes have been only about half as wide. The areas occupied by the median scutes are conspicuously sculptured. The sculpture, as shown by the third scutal area, consists of ten or twelve prominent, sharp, uneven, ridges, which radiate forward and outward from the middle of the hinder border of the area. Evidently, a somewhat similar, but less bold sculpture has characterized the areas of the costal scutes; but these surfaces have been injured so that it cannot be described. There is no evidence of the presence of supramarginal scutes.

On the left side the costal and marginal plates have been broken away. The anterior and posterior buttresses of the plastron have thus been revealed; and it is evident that the anterior one, joining the second costal plate, projected inward a considerable distance, as in *Baëna*, to form the anterior boundary of a lateral chamber, whose posterior boundary was formed by the hinder buttress joining probably the sixth costal plate.

When the costal plates broke away the extremities of the third, fourth and fifth ribs were left adhering in the matrix. These have evidently passed downward deeply against the inner sides of the corresponding marginal plates, as in *Chelydra*. Such was probably not the condition in *Baëna*. The ends of the ribs are terete, not flat as in most other cases. So far as can be determined, there were no fontanelles between the costal plates and the marginals.

Of the plastron all is present except the epiplastrals, and possibly the anterior part of the entoplastron. The plastron resembles closely that of *Baëna*; but the hinder lobe is not excavated posteriorly, but rounded. There is a considerable fontanelle between the inner ends of the mesoplastra. The presence of this may be due to the immaturity of the specimen; but judging from the closeness of all the sutures of our specimen, and from the fact that in *Baëna* the bones soon coössify, it seems probable that the fontanelle would persist till a late period of life.

The anterior, as well as the posterior, lobe has a width at the base of 36 mm. The posterior has a length of 30 mm., and the anterior has probably been about as long. The posterior lobe diminishes in width rather rapidly backward. The entoplastron has been unusually long and narrow in its hinder portion. Nothing can be determined regarding the presence of intergular and gular scutes. The mesoplastron is narrowed at the inner end, as in some species of *Baëna*. Each is traversed by the pectoro-abdominal sulcus. The bridge is 30 mm. wide, fore and aft. The inframarginal scutes which covered the bridge cannot be mapped with certainty, but there can be little doubt that they were present and much like those of *Baëna*.

This genus is certainly closely related to *Baëna*, and it may be questioned whether it would not be better to refer the species to this genus. Most of the characters given under the definition of the genus are hardly of generic value; but considering the many minor differences between the species and those of *Baëna*, and the length of the period intervening between the Morrison epoch and the Belly River and Laramie epochs in which the earliest species of *Baëna* are found, it seems probable that a complete skeleton would afford more satisfactory generic characters.

It seems at least very certain that *P. sculpta* is to be regarded as a form ancestral to the later numerous species of *Baëna* which have been found in Belly River, Upper Laramie, Puerco, Bridger and Uinta beds. Dr. Baur regarded *Compsemys plicatulus* as the forerunner of *Baëna* (*Proc. Acad. Nat. Sci.*, Phila., 1891, p. 421); but we now find in the same quarry from which *C. plicatulus* has been reported a form much nearer to *Baëna* than is *Compsemys*. It becomes evident that we must go back much further to find the common ancestor of *Compsemys* and *Probaëna*.

Platychelys, of the Upper Jurassic of Solothurn, Switzerland, is evidently very closely related to *Baëna* and *Probaëna*, and has been very properly assigned by Lydekker to the Pleurosternidæ. It differs in having a more highly sculptured carapace, supramarginal scutes, and mesoplastrals which do not reach to the midline.

In his Bibliography and Catalogue of the Fossil Vertebrata of North America, p. 437, the present writer has adopted for this family the name Pleurosternidæ, having overlooked the fact that Cope employed the name Baënidæ as far back as the year 1873 (6th Ann. Report U. S. Geol. Surv. Terrs., p. 621). The writer is not aware that the name Pleurosternidæ has had an earlier use.

EXPLANATION OF PLATE.

FIG. I. View of the carapace showing some of the vertebral and costal scutes and the sculpture.

FIG. 2. View of the plastron. The light lines indicate the sutures, the dark lines the boundaries between the scutes.

In both figures the anterior end of the shell is toward the left hand.